

DOCUMENT NAME: SCOPE OF CLAIMS

WHAT IS CLAIMED IS:

1. A small-diameter resin twisted brush, in which

the brush is made, with a multiple number of radially-projecting resin filaments mounted on, and kept clamped in, resilient, shape recoverable, and supple two or more stem materials, by twisting at both ends of said stem materials and shaping helical bristles around said stem materials; wherein

the stems themselves are resilient, shape recoverable, and supple, maintaining the shape recoverability while adapting deformed conditions.
2. A small-diameter resin twisted brush as set forth in Claim 1, in which

the two or more stem rods are constituted of resin filament rods and thermally fusible resin filament rods lined up in parallel; and

said thermally fusible resin filament rods are melted during, before, or after a step of keeping the radially-projecting resin filaments clamped in the stem rods, holding the stem rods at both ends thereof, and twisting for forming a twisted brush shape; thereby

fusing together the radially-projecting filaments that constitute bristles each with the two or more resin filament rods; and

maintaining the shape of the twisted brush which prevents the bristles from falling out, prevents the resin filament rods which constitute the twisted stem portion from detwisting, and has helical bristles.

3. A small-diameter resin twisted brush as set forth in Claim 1 wherein
the stem rods are constituted of thermally fusible resin-coated resin filament rods which
have been pre-coated with a thermally fusible resin material.
4. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3, in which the brush
is made with improved productivity by
cutting at fixed intervals, a continuous twisted brush which is generated by twisting
while the resin core material or the thermally fusible fibers, of any length, hold the
radially-projecting fibers that constitute the bristles clamped at flexed intervals, subjecting to
ultrasonic, radio frequency, or a machining treatment, thereby removing [sharp] edges
generating a smoothened shape, thereby
shortening the time per twisted brush for cooling and holding after the heat treatment.
5. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3 , wherein the bristle
size is color coded by using a pre-pigmented resin for the resin filament rods or the thermally
fusible fibers.
6. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3, wherein the
small-diameter metal-free brush stem tips are subjected to ultrasonic, radio frequency, or a
machining treatment, thereby removing [sharp] edges generating a smoothened shape, thereby
facilitating brush insertion.